

**REMARKS**

Claim 1-14 and 16-19 are pending. Upon entry of this amendment, claims 1, 2, 4, 6-14, 16-19, and 30 will be pending, claim 1 having been amended, claim 3 canceled, and claim 30 added. Claim 1 has been amended to include the feature of now-canceled claim 3. New claim 30 finds support in the specification, page 21, lines 4-10 and 26-27, and FIGS. 4-6, for example. There are no issues of new matter.

The specification has been amended to correct the objected-to informalities. Withdrawal of the objection is requested.

Claims 1, 3, 7, 10, 12, 16 and 18-19 stand rejected under 35 USC 102(b) as being anticipated by Harada (US 5,179,956). Claim 3 has been canceled, rendering its rejection moot. Applicants traverse the remaining rejection.

Claim 1 as amended recites a pulse wave measuring apparatus that includes a substrate (e.g., FIG. 6, element 1) having a pressure sensor thereon, a protection member (e.g., FIG. 6, element 12) accommodating the substrate, and an air chamber (e.g., FIG. 6, element 20) open to atmosphere and interposed between a wall surface of the protection member and an end surface of the substrate. The air chamber advantageously mitigates the stress applied to the substrate.

In contrast, Harada neither discloses nor suggests Applicants' claimed combination of elements, including an air chamber open to atmosphere and interposed between a wall surface of a protection member and an end surface of a substrate, as in claim 1. Rather, Harada specifically discloses a *rear* surface of a sensor chip 60 that is open to atmosphere, not an *end* surface of the sensor chip 60. See Harada, col. 5, lines 8-15. Moreover, Harada discloses that a silicon rubber layer 90 is formed to surround and cover the main surface and the end surfaces of the sensor chip 60 (see Harada, col. 6, lines 11-17) and that an adhesive layer 54 is formed to fill the gap between a plate member 56 and a head case 50 (see Harada, col. 4, lines 47-51, and FIG. 3). As such, even were there an air chamber at the end surface of the sensor chip 60, such a chamber would not be open to atmosphere due to at least the rubber layer 90 and the adhesive layer 54.

The Office Action asserts that Harada's disclosure of opening a rear chip surface to atmosphere is the same as opening an end surface to atmosphere, as in claim 1. See Office Action, page 3, items 6-7. Applicants disagree. As mentioned previously, Harada discloses that its rear surface is open to atmosphere and that its end surface is sealed from atmosphere. Moreover, a rear surface and an end surface are distinctly different structures as well-known by a person skilled in the art. Therefore, the disclosure of one can not be interpreted to be the disclosure of the other. Indeed, in an embodiment, Applicants describe opening a rear surface of substrate 1 to atmosphere via small hole 7, communication hole 10, and communication hole 13. See the specification, page 20, line 19, to page 21, line 3, and FIG. 4, for example. It is clear from this description that Applicants' rear surface opening is different from Applicants' end surface opening. Therefore, Harada's disclosure of a rear surface can not anticipate Applicants' claimed end surface. Neither would there have been any reason to modify Harada to open its end surface to atmosphere.

Claim 1 and its dependent claims 7, 10, 12, 16, 18, and 19 are not anticipated by Harada. Withdrawal of the rejection is requested.

Claims 1 and 2 stand rejected under 35 USC 102(b) as being anticipated by Narimatsu (US 5,467,771). Applicants traverse the rejection.

Claim 1 as amended is described above.

In contrast, Narimatsu neither discloses nor suggests Applicants' claimed combination of elements, including an air chamber open to atmosphere and interposed between a wall surface of a protection member and an end surface of a substrate, as in claim 1. Rather, Narimatsu specifically discloses a *back* surface of a sensor chip 48 that is open to atmosphere, not an *end* surface of the sensor chip 48. See Narimatsu, col. 4, lines 45-51. Moreover, Narimatsu neither discloses nor suggests that any gap formed between the square hole 52 and the sensor chip 62 is open to atmosphere.

The Office Action asserts that Narimatsu's disclosure of opening a back chip surface to atmosphere is the same as opening an end surface to atmosphere, as in claim 1. See Office Action,

page 6, items 15. Applicants disagree. A person skilled in the art knows that a back surface is not the same as an end surface. Therefore, Narimatsu's disclosure of a back surface can not anticipate Applicants' claimed end surface.

Claims 1 and 2 are not anticipated by Narimatsu. Withdrawal of the rejection is requested.

Claims 4, 6, 13, and 17 stand rejected under 35 USC 103(a) as being unpatentable over Harada in view of Fujikawa (US 5,101,829). Applicants traverse the rejection.

The deficiencies of Harada are not corrected by Fujikawa because Fujikawa also fails to disclose or suggest Applicants' claimed combination of elements, including an air chamber open to atmosphere and interposed between a wall surface of a protection member and an end surface of a substrate, as in claim 1. Therefore, the combination of Harada and Fujikawa does not provide Applicants' claimed invention.

Claims 4, 6, 13, and 17, which depend from claim 1, are patentable over Harada in view of Fujikawa. Withdrawal of the rejection is requested.

Claim 8 stands rejected under 35 USC 103(a) as being unpatentable over Harada in view of Chesney (US 6,159,166). Applicants traverse the rejection.

The deficiencies of Harada are not corrected by Chesney because Chesney also fails to disclose or suggest Applicants' claimed combination of elements, including an air chamber open to atmosphere and interposed between a wall surface of a protection member and an end surface of a substrate, as in claim 1. Therefore, the combination of Harada and Chesney does not provide Applicants' claimed invention.

Claim 8, which depends from claim 1, is patentable over Harada in view of Chesney. Withdrawal of the rejection is requested.

New claim 30 recites the pulse wave measuring apparatus of claim 1 further comprising a protection film (e.g., FIG. 6, element 16) covering the main surface of the substrate and the air chamber and the protection member having a communication hole (e.g., FIG. 6, element 14) such that the air chamber is open to atmosphere.

None of the cited references discloses or suggests Applicants' claimed combination of elements, including the protection film covering the main surface of the substrate and the open-to-atmosphere air chamber. The protection film advantageously prevents such problems as dust being introduced into the air chamber or a part of skin being caught in the air chamber. Claim 30 is patentable over the cited references for at least the above reason and by virtue of its dependency from claim 1.

Applicants acknowledge the indication that claims 5, 9, and 11 include allowable subject matter.

Each of the pending claims is in condition for immediate allowance. A Notice of Allowance is therefore requested.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. **03-1952** referencing docket no. **245402011300**.

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Respectfully submitted,

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